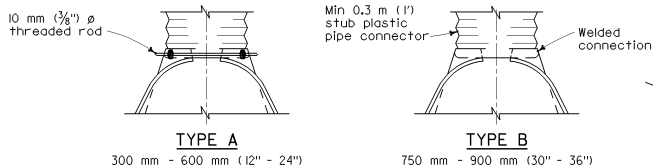
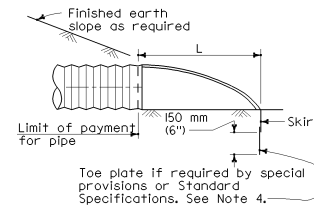
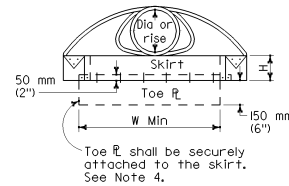
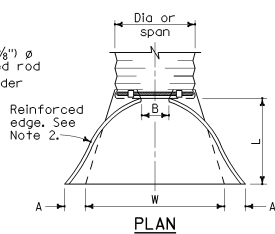


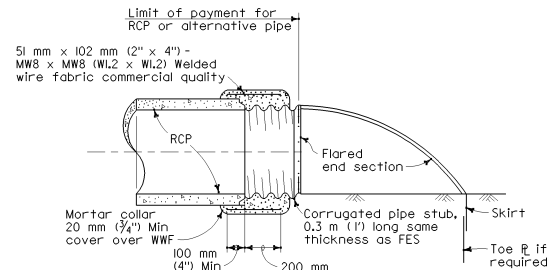
TYPE III **CONNECTOR STRAP DETAIL**
ALTERNATIVE CONNECTIONS FOR
PIPE TO METAL FLARED END SECTIONS
 See Note 7



TYPE A **TYPE B**
ALTERNATIVE CONNECTIONS FOR
PIPE TO PLASTIC FLARED END SECTIONS



TYPICAL CROSS-SECTION



FLARED END SECTION CONNECTION TO RCP

NOTES

- All 3-piece bodies to have 2.8 mm (0.09 inch) thick sides and 3.5 mm (0.138 inch) thick center panels. Width of center panels to be greater than 20% of the pipe periphery. Multiple panel bodies to have lap seams which are to be tightly joined by rivets or bolts.
- Reinforced edges to be supplemented with stiffener angles for the 1500 mm thru 2100 mm (60 inch thru 84 inch) round, 1925 mm x 1300 mm (77 inch x 52 inch) and 2075 mm x 1425 mm (83 inch x 57 inch) pipe-arch sizes. The angles will be 51 mm x 51 mm x 6.4 mm (2 inch x 2 inch x 1/4 inch) for the 1500 mm thru 1800 mm (60 inch thru 72 inch) round, 1925 mm x 1300 mm (77 inch x 52 inch) and 2075 mm x 1425 mm (83 inch x 57 inch) pipe-arch sizes and 64 mm x 64 mm x 6.4 mm (2 1/2 inch x 2 1/2 inch x 1/4 inch) for 1950 mm (78 inch) and 2100 mm (84 inch) round. The angles to be attached by 10 mm (3/8 inch) diameter nuts and bolts.
- Angle reinforcement shall be placed under the center panel seams on the 1925 mm x 1300 mm (77 inch x 52 inch) and 2075 mm x 1425 mm (83 inch x 57 inch) pipe-arch sizes.
- Toe plate to be available as an accessory when specified.
- End of pipe to be finished with annular corrugations to conform flared end section so that minimal leakage results from the connection. Other designs may be used with approval of the Engineer.
- For 300 mm thru 600 mm (12 inch thru 24 inch) helical end section connection, a universal coupling band attached to the metal end section by rivets, bolts or 25 mm (1 inch) long shop tack welds spaced at same intervals as dimples may be used in place of the 0.3 m (1 foot) stubs. See Standard Plan D97C.
- The types of alternative connections for pipe to metal flared end sections shall conform to the following:
 CIRCULAR PIPES
 300 mm thru 600 mm (12 inch thru 24 inch) Type I or III
 750 mm thru 2100 mm (36 inch thru 84 inch) Type II or III
 PIPE-ARCHES
 525 mm x 375 mm thru 1425 mm x 950 mm (21 inch x 15 inch thru 57 inch x 38 inch) Type II or III
 1600 mm x 1075 mm thru 2075 mm x 1425 mm (64 inch x 43 inch thru 83 inch x 57 inch) Type III

CIRCULAR PIPES						
PIPE DIAMETER	END SECTION THICKNESS	DIMENSION-MILLIMETERS				
		A	B	H	L	W
		±25 mm (1")	Max	±25 mm (1")	±40 mm (1½")	±50 mm (2")
*300 mm (12")	1,6 mm (0,064")	150 mm (6")	150 mm (6")	150 mm (6")	530 mm (21")	600 mm (24")
*375 mm (15")		180 mm (7")	200 mm (8")		660 mm (26")	760 mm (30")
*450 mm (18")		200 mm (8")	250 mm (10")		790 mm (31")	910 mm (36")
525 mm (21")		230 mm (9")	300 mm (12")		910 mm (36")	1070 mm (42")
*600 mm (24")	2,0 mm (0,079")	250 mm (10")	330 mm (13")	200 mm (8")	1040 mm (41")	1220 mm (48")
*750 mm (30")		300 mm (12")	410 mm (16")		1300 mm (51")	1520 mm (60")
*900 mm (36")		360 mm (14")	480 mm (19")		1520 mm (60")	1830 mm (72")
1050 mm (42")		410 mm (16")	560 mm (22")		1750 mm (69")	2130 mm (84")
1200 mm (48")	2,8 mm (0,109")	460 mm (18")	690 mm (27")	300 mm (12")	1980 mm (78")	2290 mm (90")
1350 mm (54")			760 mm (30")		2130 mm (84")	2590 mm (102")
1500 mm (60")			840 mm (33")		2210 mm (87")	2900 mm (114")
1650 mm (66")			910 mm (36")			3050 mm (120")
1800 mm (72")			990 mm (39")			3200 mm (126")
1950 mm (78")			1070 mm (42")			3350 mm (132")
2100 mm (84")			1140 mm (45")			3510 mm (138")

* Equivalent plastic FES to meet AASHTO M-294 and ASTM D-1248 Specification, and shall conform to all dimensions shown above except for end section thickness, which may be 0.1 mm (0.004 inch) thinner.

FLARED END SECTIONS FOR CORRUGATED METAL AND PLASTIC PIPE CULVERTS

PIPE-ARCHES							
DESIGNATION		END SECTION THICKNESS	DIMENSION				
			A	B	H	L	W
SPAN	RISE		±25 mm (1")	Max	±25 mm (1")	±40 mm (1 1/2")	±50 mm (2")
525 mm (21")	375 mm (15")	1.6 mm (0.064")	180 mm (7")	250 mm (10")	150 mm (6")	580 mm (23")	910 mm (36")
600 mm (24")	450 mm (18")		200 mm (8")	300 mm (12")		710 mm (28")	1070 mm (42")
700 mm (28")	500 mm (20")		230 mm (9")	360 mm (14")		810 mm (32")	1220 mm (48")
875 mm (35")	600 mm (24")		250 mm (10")	410 mm (16")		990 mm (39")	1520 mm (60")
1050 mm (42")	725 mm (29")	2.0 mm (0.079")	300 mm (12")	460 mm (18")	200 mm (8")	1170 mm (46")	1910 mm (75")
1225 mm (49")	825 mm (33")		330 mm (13")	530 mm (21")	230 mm (9")	1350 mm (53")	2160 mm (85")
1425 mm (57")	950 mm (38")		2.8 mm (0.109")	660 mm (26")	300 mm (12")	1600 mm (63")	2290 mm (90")
1600 mm (64")	1075 mm (43")			760 mm (30")		1780 mm (70")	2590 mm (102")
1775 mm (71")	1175 mm (47")	840 mm (33")		1960 mm (77")		2900 mm (114")	
1925 mm (77")	1300 mm (52")	910 mm (36")				3200 mm (126")	
2075 mm (83")	1425 mm (57")	990 mm (39")	3510 mm (138")				

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**METAL AND
 PLASTIC FLARED
 END SECTIONS**

These "Standard Plans for Construction of Local Streets and Roads" contain units in two systems of measurement: International System of Units (SI or "metric") and United States Standard Measures shown in the parentheses (). The measurements expressed in the two systems are not necessarily equal or interchangeable. See the "Foreword" at the beginning of this publication.

NO SCALE

D94A

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
				34541	
July 1, 2002 PLANS APPROVAL DATE The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet. Caltrans now has a web site! To get to the web site, go to http://www.dot.ca.gov					